

Message Text

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ACTION PM-04

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FM AMEMBASSY TOKYO
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ERDA WASHDC
INFO SECSTATE WASHDC 4836

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ERDA FOR HELFRICH

E.O. 11652: N/A
TAGS: TECH, JA
SUBJECT: ARTICLE ON NUCLEAR WEAPONS BY IMAI

FOLLOWING IS A TRANSLATION OF A SUMMARY OF AN ARTICLE IN THE
DECEMBER, 1976 ISSUE OF THE MONTHLY MAGAZINE, ENERGY, BY
DR. RYUKICHI IMAI. IT IS NOTED THAT DR. IMAI MAKES THE
USUAL DISTINCTION BETWEEN WEAPONS-GRADE AND NON-WEAPONS
GRADE PU. QUOTE WHAT ARE NUCLEAR WEAPONS? BY RYUKICHI
IMAI, SCIENCE COMMENTATOR

1. IMPACTS OF CHINESE NUCLEAR TEST

ON SEPTEMBER 26, 1976, CHINA CONDUCTED THE 19TH NUCLEAR
EXPLOSION TEST. SINCE THE TEST WAS IN THE ATMOSPHERE, IT
DISPERSED A LARGE AMOUNT OF RADIONUCLIDES IN THE AIR. IN A
FEW DAYS, VARIOUS UNUSUAL PHENOMENA ARE TO BE SEEN IN JAPAN,
TOO. IN JAPAN, BECAUSE OF THE INCREASE IN THE NUMBER OF
NUCLEAR POWER PLANTS, THERE ARE MANY MONITORING POSTS
TO MEASURE ENVIRONMENTAL RADIOACTIVITY ALL THE TIME.
AROUND SEPTEMBER 29, THE MONITORING POSTS IN VARIOUS
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PARTS OF JAPAN BEGAN TO GIVE ALARMS OF HIGH RADIOACTIVITY.
CONSEQUENTLY, A RESEARCH REACTOR IN TOKAI-MURA WAS TEM-
PORARILY SHUT DOWN. RADIOACTIVITY OUTSIDE THE REACTOR
FACILITY WAS ONE DIGIT HIGHER THAN THAT INSIDE, AND
THERE WAS NO CHOICE BUT PROHIBIT ACCESS TO THE REACTOR
IN ORDER TO KEEP THE INSIDE OF THE REACTOR CLEAN. IT
FOLLOWS THAT THE GREATER PART OF THE JAPANESE MAY HAVE

BEEN EXPOSED TO RADIATION TEN TIMES AS HIGH AS THAT FOR
THE WORKERS IN THE REACTOR FACILITY.

2. PEACETIME USES

THE MAJOR BOTTLENECK IN THE PEACETIME USES OF NUCLEAR
ENERGY TODAY IS RADIOACTIVE WASTES AND ENVIRONMENTAL CONTAMINATION.
IN THESE RESPECTS, THE IMPACTS OF NUCLEAR WEAPONS ARE SEVERAL
DIGITS HIGHER THAN THOSE OF NUCLEAR POWER GENERATION AS A
WHOLE. ANY CAREFUL CONSIDERATION OF THE PART OF PEACETIME
USES OF NUCLEAR ENERGY WOULD BE OF NO USE IF A COUNTRY DETONATES
A SINGLE TEST NUCLEAR WEAPON.

NUCLEAR POWER GENERATION TECHNIQUES HAVE SPREAD ALL OVER
THE WORLD. THERE IS NO MEANS TO KEEP NUCLEAR TECHNIQUES FROM
BEING PUT TO USE. IN THE NEAR FUTURE, LOTS OF COUNTRIES WILL
PROBABLY COME TO BE ABLE TO HAVE NUCLEAR ARMS WITHOUT GREAT
DIFFICULTY IF THEY SO DESIRE. THE PROBLEM NOW LIES IN THIS
FACT.

3. NUCLEAR WEAPONS

PRACTICALLY, HOWEVER, MAKING NUCLEAR WEAPONS IS NOT SO
EASY SINCE IT INVOLVES THE FOLLOWING QUESTIONS: (A) TECHNICAL
LEVEL AND TECHNICAL CAPABILITY. (B) BOMB MATERIALS, AND
RELIABILITY AS WEAPONS. (C) WHETHER CARRYING WEAPON IS
AVAILABLE, AND ITS ACCURACY. (D) POLITICAL JUDGMENT
ON POSSESSION ON NUCLEAR WEAPONS.

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4. CAN EFFECTIVE WEAPONS BE MADE?

URANIUM ENRICHMENT TECHNIQUES ARE EXTREMELY COMPLEX. THE CENTRIFUGE PROCESS IS SAID TO BE MORE EFFICIENT THAN THE GASEOUS DIFFUSION PROCESS, BUT CENTRIFUGE TECHNIQUES ARE YET ON THEY WAY OF DEVELOPMENT. FURTHERMORE, THE CENTRIFUGE INDUSTRY MUST BE BACKED BY A HIGH-LEVEL MECHANICAL INDUSTRY. THE DEGREE OF ENRICHMENT OF THE LWR FUEL IS MUCH LOWER THAN THAT OF THE A-BOMB. NO MATTER HOW ACTIVE NUCLEAR POWER GENERATION MAY BECOME, NUCLEAR PROLIFERATION FROM THE ROUTE OF URANIUM ENRICHMENT FOR REACTOR FUEL IS INCONCEIVABLE.

ASHFOR PLUTONIUM, ALTHOUGH THINGS ARE BEING VEILED IN MILITARY SECRETS, THE NORMAL WAY OF THINKING IS THAT, IF WEAPON-GRADE PLUTONIUM IS TO BE OBTAINED, THE NUCLEAR POWER PLANT WOULD HAVE TO BE OPERATED IN AN EXTRMELY ABNORMAL MODE. THIS WOULD CERTAINLY BE DETECTED IN INTERNATIONAL INSPECTIONS. IF INTERNATIONAL INSPECTIONS ARE CONDUCTED REASONABLY AND EFFECTIVELY, NUCLEAR POWER GENERATION WOULD NOT BE LINKED DIRECTLY WITH NUCLEAR WEAONS. A-BOMB MATERIALS HAVE SO FAR BEEN PRODUCED ONLY FROM PLANTS NOT COVERED BY INTERNATIONAL INSPECTIONS, SUCH AS LARGE EXPERIMENTAL REACTORS AND SMALL REPROCESSING PILOT PLANTS.
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THEREFORE, THE ONLY THING THAT MUST BE DONE FROM NOW IS TO EXERCISE STRICT INTERNATIONAL CONTROL OVER THESE TWO.

5. MISSILE TECHNOLOGY

DEVELOPMENT OF NUCLEAR WEAPONS IS NOT EASY. DEVELOPMENT OF CARRYING WEAPONS INVOLVES GREATER DIFFICULTIES. CHINA SUCCEEDED IN A NUCLEAR TEST TEN YEARS AGO, BUT EVEN THAT COUNTRY HAS NOT ACCOMPLISHED TECHNICAL DEVELOPMENT SIGNIFICANT ENOUGH TO GREATLY INFLUENCE WORLD STRATEGY. WHEN IT COMES TO THE DEVELOPING COUNTRIES WHICHARE YET TO CONSIDER NUCLEAR ARMAMENT, THEY CAN HARDLY ACCOMPLISH SIGNIFICANT NUCLEAR ARMAMENT WITHIN THE 20TH CEENTURY.

6. REAL SUBSTANCE OF THREAT OF NUCLEAR PROLIFERATION

AFTER ALL, THE REAL SUBSTANCE OF THE NUCLEAR PROLIFERATION PROBLEM LIES, RATHER THAN IN REAL THREAT, IN THE FACT THAT

THE COUNTRIES WHICH HAVE ACQUIRED NUCLEAR EXPLOSION CAPABILITIES MAKE POLITICAL DEMONSTRATIONS TOWARD THE SURROUNDING COUNTRIES. WHAT IS IMPORTANT IS TO NIP IN THE BUD, THROUGH STRICTER INTERNATIONAL INSPECTIONS, THE DEVELOPMENT OF NUCLEAR DETONATION DEVICES.

THE UNITED STATES IS SELLING MODERN FIGHTER-BOMBERS TO MIDDLE EAST COUNTRIES. IMMEDIATELY STOPPING SUCH ACTIVITIES WOULD BE MUCH MORE USEFUL IN PREVENTING NUCLEAR PROLIFERATION THAN CONTROLLING THE EXPORT OF NUCLEAR POWER PLANTS. MORE IMPORTANT ARE EFFORTS TO ELIMINATE THE POSSIBILITY OF SUCH POLITICAL MOTIVES AS TO TRY TO THREAT ADVANCED INDUSTRIAL COUNTRIES BY MAKING NUCLEAR WEAPONS. IF THESE EFFORTS ARE TO BE PILED UP, THERE WOULD BE NO NEED FOR JUMPING AT SUSPENSION OF PEACETIME USES OF NUCLEAR POWER MERELY FROM THE FEAR OF NUCLEAR PROLIFERATION.

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JAPAN, WEST GERMANY, SWEDEN AND ITALY HAVE TECHNICAL CAPABILITIES MORE THAN ENOUGH TO HAVE NUCLEAR ARMS, YET THEY ARE NOT SHOWING SUCH INTENTION AT ALL. THIS FACT INDICATES THAT THE SPREAD OF NUCLEAR POWER TECHNIQUES AND THE PROLIFERATION OF NUCLEAR ARMS ARE SUBSTANTIALLY DIFFERENT MATTERS. UNQUOTE.
HODGSON

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